APPENDIX E
INTERNATIONAL REGIMES

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There are a number of international treaties, agreements, regimes, and informal arrangements that seek to constrain the spread of nuclear, biological, and chemical weapons and missiles as well as conventional weapons. Some address material/agents and equipment in general terms while others are more specific. Some have led to explicit export control arrangements limiting the transfer of technologies, materials and equipment while others contain broad prohibitions of activities. All have varying degrees of participation and adherence. The agreements, in many cases, establish an international norm of behavior that can be used to highlight aberrant actions.

NUCLEAR NON-PROLIFERATION TREATY (NPT)

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) entered into force in 1970 and is adhered to by over 170 nations. A fundamental objective of the NPT is to prevent the further spread of nuclear weapons. To this end, the nuclear weapons states (five had tested and manufactured nuclear weapons by the time the treaty was negotiated and available for signature) agreed not to transfer nuclear weapons or other nuclear explosive devices, and not to assist, encourage, or induce non-nuclear weapons states (NNWS) to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices. Each NNWS pledged not to receive nuclear weapons or other nuclear explosive devices, not to manufacture or otherwise acquire them, and not to seek or receive assistance in their manufacture. The treaty also obliged each NNWS party to the NPT to accept international safeguards through agreements negotiated with the International Atomic Energy Agency (IAEA). The intent of these safeguards is to prevent by deterring, via IAEA inspections, the diversion of nuclear material for nuclear explosive purposes. Nuclear material and specified equipment would be exported to NNWS only under IAEA safeguards.

An offshoot of the NPT, the Zangger Committee, which first met in 1971, maintains a list of nuclear exports that require IAEA safeguards as a condition of supply. The Committee is made up of 30 NPT members who export nuclear material and equipment. The **Nuclear Suppliers Group (NSG)** reinforces the work of the Zangger Committee through an expanded set of controls and by potentially including non-NPT states that are nuclear suppliers. In April 1992, the NSG approved a comprehensive arrangement to prohibit exports of some 65 dual-use items of equipment and materials to unsafeguarded nuclear activities and nuclear explosive programs. It also agreed to a common policy not to engage in significant, new nuclear cooperation with any NNWS that has not committed itself to full-scope safeguards on all present and future nuclear activities.

The NSG conditions for transfer apply to all NNWS whether or not they are NSG members. Nuclear transfers require acceptance of IAEA safeguards; dual-use transfers are prohibited for use in unsafeguarded nuclear fuel-cycle activities and nuclear explosives activities.

Legal authority in the United States for controlling the export of specialized nuclear items is the Atomic Energy Act and the NPT. The licensing agencies are the Nuclear Regulatory Commission and the Department of Energy. The Code of Federal Regulations (CFR) #110 and #810 address federal regulations regarding nuclear equipment and material and assistance to foreign atomic energy activities. On an international basis, CFR #110 controls items on the International Atomic Energy List.

GENEVA PROTOCOL OF 1925 (GP)

At the Geneva Conference for the Supervision of the International Traffic in Arms of 1925, the United States took the initiative of seeking to prohibit the export of gases for use in war. At French suggestion, it was decided to draw up a protocol on non-use of poisonous gases. Poland recommended that bacteriological weapons be covered in the prohibition. The Geneva Protocol was signed on June 17, 1925, and restated the prohibition previously laid down by the Versailles and Washington treaties and added a ban on bacteriological warfare.

The Protocol contained a one-paragraph prohibition against the use of chemical (and bacteriological) weapons. However, agents could be legally developed, produced, stockpiled, and transferred. Several countries, as conditions of their ratification or accession, reserved the right to respond in kind to aggressors using these weapons.

BIOLOGICAL WEAPONS CONVENTION (BWC)

The 1972 Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BWC) entered into force in 1975 and has been signed and ratified by over 135 parties. The BWC prohibits the development, production, and stockpiling of toxins or of microbial or other biological agents of types and in quantities that have no justification for prophylactic, protective, or other peaceful purposes; also prohibited are development, production, and stockpiling of weapons, equipment, or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict. It does not provide a mechanism for controlling export of these items.

During the two decades since the BWC entered into force, there have been increasing concerns about biological weapons proliferation and the ability of the Convention to deter it. Efforts at periodic review conferences have centered on strengthening the implementation and effectiveness of the Convention. The treaty as written has no verification measures. Although confidence-building measures have been approved, there is still concern whether verification could be effective. There is no existing BWC committee comparable to the Zangger Committee in the NPT. The Convention does not prohibit exchange of equipment, materials, or scientific and technical information for peaceful purposes.

The Second Review Conference, held in 1986 in an effort to reduce the occurrence of ambiguities, doubts, and suspicions and to improve international cooperation in peaceful biological activities, adopted voluntary measures to strengthen confidence in treaty compliance and to help deter violations.

Because of continuing concerns about proliferation, possible noncompliance of some parties, and the rapid and significant advances in biotechnology, the Third Review Conference, held in 1991, reaffirmed and extended the voluntary confidence-building measures. As a result of a mandate of the Third Review Conference, an Ad Hoc Group of Government Experts convened to identify, examine, and evaluate potential measures for verifying the provisions of the BWC from a scientific and technical viewpoint.

The Ad Hoc Group (also known as "Verification Experts") assessed 21 potential off-site and on-site measures using six mandated evaluation criteria. They also considered some combination of measures. The group's final report concluded that because of the dual-use nature of nearly all biological-weapons-related facilities, equipment, and materials, and the huge overlap between prohibited and permitted purposes, no single approach could fulfill the mandated criteria for a stand-alone verification measure. Nevertheless, the group found that some measures, either singly or in combination, have the potential to strengthen the BWC by helping to differentiate between prohibited and permitted activities and thus to reduce ambiguities about compliance.

CHEMICAL WEAPONS CONVENTION (CWC)

The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction [referred to as the Chemical Weapons Convention (CWC)] was opened for signature in January 1993. Over 160 countries have signed the Treaty. It entered into force on April 29, 1997.

The CWC bans the production, acquisition, stockpiling, and use of chemical weapons. It charges each party not to develop, produce, otherwise acquire, stockpile, or retain chemical weapons; transfer, directly or indirectly, chemical agents to anyone; use chemical weapons; engage in any military preparations to use chemical weapons; and assist, encourage, or induce, in any way, anyone to engage in any activity prohibited to a party to the Convention. Each Party undertakes in accordance with the provisions of the Convention to destroy the chemical weapons it possesses or that are located in any place under its jurisdiction or control, destroy all chemical weapons it abandoned on the territory of another Party, and destroy any chemical weapons production facilities it owns or possesses or that are located in any place under its jurisdiction or control. Finally, each Party undertakes not to use riot control agents as a method of warfare.

The CWC provides for routine and challenge inspections to assist in the verification of compliance with the Convention. Routine inspections of declared facilities are mandated by the Convention. In accordance with CWC provisions, challenge inspections may be conducted at a facility where a Party suspects illegal activities.

The CWC does not include a specific list of controlled chemicals or equipment. It does contain an Annex on Chemicals in which are listed three "Schedules" of toxic chemicals and their precursors based on the threat they pose to the purpose and objectives of the CWC and the extent of their commercial use. The Verification Annex describes restrictions on transfers of scheduled chemicals in detail. Transfers of some chemicals to countries who have not ratified the Convention will be prohibited by the CWC.

AUSTRALIA GROUP (AG)

In 1984, several countries, reacting to the use of chemical weapons in the Iran-Iraq War, began informal consultations, the goal of which was to discourage and impede proliferation by harmonizing national export controls on chemical weapon (CW) materials. This informal, international forum was chaired by Australia and became known as the Australia Group.

At their December 1992 meeting the AG members, recognizing the need to take steps to address the increasing problem of the spread of biological weapons, agreed on measures to control the export of biological agents and dual-use equipment which could be used in the production of biological weapons. They also agreed on a framework paper for effective licensing arrangements for export controls, thereby further strengthening measures to address the problem of chemical and biological weapon (CBW) proliferation and use.

Today, the AG controls extend to 54 dual-use chemical precursors for CW, microorganisms and toxins that could be used in BW, and dual-use equipment and technology that could be used in chemical or biological weapons production. Controls agreed to during meetings of the AG are applied on a national basis, although all participants are agreed that controls will be more effective if similar measures are introduced by all potential exporters of relevant chemicals and equipment and by countries of possible transshipment. In the United States, the Commerce Control List (CCL) is the vehicle that implements AG agreements.

There are currently 30 members of the AG. It has no charter or constitution and operates on consensus. The AG's actions are viewed as complementary measures in

support of the 1925 Geneva Protocol, the 1972 Biological and Toxins Weapons Convention, and the 1993 Chemical Weapons Convention. In tandem with export controls, the AG has periodically used warning mechanisms to sensitize the public to CBW proliferation. The AG has issued an informal "warning list" of dual-use CW precursors and bulk chemicals and of CW-related equipment. Members develop and share the warning lists with their chemical industry and ask it to report on any suspicious transactions. The AG has also used an approach to warn industry, the scientific community, and other relevant groups of the risks of inadvertently aiding BW proliferation.

Meetings of the AG focus on sharing information about national export controls, considering proposals for "harmonization"—the adoption of common export controls by all members—and considering other measures to address CBW proliferation and use.

MISSILE TECHNOLOGY CONTROL REGIME (MTCR)

The Missile Technology Control Regime currently provides the central institutional arrangement as well as the base international norm for dealing with missile proliferation. The aim of the MTCR is to restrict the proliferation of missiles, unmanned air vehicles, and related technology for those systems capable of carrying a 500-kilogram payload at least 300 kilometers as well as systems intended for the delivery of weapons of mass destruction .

The MTCR is neither an international agreement nor a treaty but a voluntary arrangement among countries which share a common interest in limiting the spread of missiles and missile technology. The MTCR considers "missiles" to include ballistic missiles, space launch vehicles (SLV), and sounding rockets. Unmanned air vehicles (UAVs) include cruise missiles, drones, and remotely piloted vehicles (RPVs). The MTCR's members cooperate by applying on a national level common export control guidelines to an agreed list of items (the Equipment and Technology Annex).

When the MTCR was instituted in 1987 by the United States and six other concerned countries, it was intended to limit the risks of nuclear proliferation by controlling technology transfers relevant to nuclear weapon delivery other than by manned aircraft (i.e., by restricting the proliferation of missiles and related technology). In 1993, MTCR member states tightened export controls further, agreeing to also control transfers of rocket systems or UAVs (including cruise missiles) capable of a 300-km range regardless of range or payload. Also, if the seller has any reason to believe these systems would be used to deliver WMD, there is a "strong presumption to deny" the transfer regardless of the inherent range and/or payload of the system. There are now 29 MTCR members; other countries have agreed to abide by the basic tenets of the MTCR.

The annex of controlled equipment and technology is divided into "Category I" and "Category II" items. It includes equipment and technology, both military and dual-use, that are relevant to missile development, production, and operation. Category I consists of complete missile systems (including ballistic missile systems, space launch vehicles, and sounding rockets); unmanned air-vehicle systems such as cruise missiles, and target and reconnaissance drones; specially designed production facilities for these systems; and certain complete subsystems such as rocket engines or stages, reentry vehicles, guidance sets, thrust-vector controls, and warhead safing, arming, fuzing, and firing mechanisms. According to the MTCR Guidelines, export of Category I items is subject to a presumption of denial.

Category II covers a wide range of parts, components, subsystems, propellants, structural materials, test and production equipment, and flight instruments usable for the Category I systems and subsystems. These items are less sensitive components and technologies, most of which have dual-use applications. Category II also covers those systems that have a range of 300 km (but cannot carry a 500-kg payload to that range) and some associated subsystems. Category II items may be exported by MTCR members on a case-by-case basis, provided that the importing state furnishes sufficient end-use guarantees for the item.

The MTCR Guidelines specifically state that the Regime is "not designed to impede national space programs or international cooperation in such programs as long as such programs could not contribute to delivery systems for weapons of mass destruction." The United States maintains a strict interpretation of this statement. Despite some differences of opinion with regard to commercial space applications, all members agree that the technology used in an SLV is virtually identical to that used in a ballistic missile.

WASSENAAR ARRANGEMENT (WA)

In December 1995, 28 governments agreed to establish a new international regime to increase transparency and responsibility for the global market in conventional arms and dual-use goods and technologies. The official name of the regime is "The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies," Wassenaar being the town outside The Hague where five rounds of negotiations took place over a 2-year period. The arrangement will respond to the new security threats of the post Cold War by providing greater openness through information sharing about arms and technology transfers worldwide.

The Wassenaar Arrangement is an international framework that will need to be elaborated and defined more fully. It will focus on the threats to international and regional peace and security. A central part of the regime is the commitment by its members to prevent the acquisition of armaments and sensitive dual-use items for military end-users to states whose behavior today is, or becomes, a cause for serious concern, such as Iran, Iraq, Libya, and North Korea.

The regime will also undertake to prevent destabilizing accumulations of conventional arms worldwide. The Iraq war taught that indiscriminate exports of conven-

tional weapons and sensitive dual-use technologies can pose serious threats to U.S. interests, to foreign policy goals, and to international security. This regime will seek to apply the lessons of Iraq to prevent similar destabilizing buildups. It will also fill an important gap in the global non-proliferation regimes by covering conventional arms and associated dual-use technologies. The WA, by requiring its members to adhere to current non-proliferation regimes, will encourage non-members to also adhere to these regimes.

The WA seeks to prevent destabilizing buildups of weapons by establishing a formal process of transparency and consultation. Participants have agreed to control through their national policies those items and technologies contained in a list of Dual-Use Goods and Technologies and in a separate Munitions List.

OTHER NUCLEAR-RELATED AGREEMENTS

There are a number of other agreements that restrict nuclear weapons in some way. Many of them ban nuclear weapons from a location or geographic area (i.e., nuclear-weapon-free zones). The following lists the treaty/agreement, the year it entered into force, the number of signatories, and a brief description of its provisions.

Antarctic Treaty: 1961; 37 countries; internationalized and demilitarized the Antarctic Continent and provided for its cooperative exploration and future use. The treaty prohibits "any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of military weapons."

Limited Test Ban Treaty (LTBT): 1963; 117 countries; prohibits nuclear weapons tests "or any other nuclear explosion" in the atmosphere, in outer space, and under water.

Outer Space Treaty: 1967; 98 countries; parties undertake not to place in orbit around the Earth, install on the moon or any other celestial body, or otherwise station in outer space nuclear or other weapons of mass destruction .

Latin American Nuclear-Free Zone Treaty (Treaty of Tlatelolco): 1968; 29 countries (24 in force); obligates Latin American parties not to acquire or possess nuclear weapons, nor permit the storage or deployment of nuclear weapons on their territories by other countries.

Seabed Treaty: 1972; 94 countries; prohibits emplacing nuclear weapons or weapons of mass destruction on the sea bed and the ocean floor beyond the 12-mile coastal zone.

Threshold Test Ban Treaty (TTBT): 1974; United States, USSR; prohibits underground nuclear tests having a yield exceeding 150 kilotons.

South Pacific Nuclear Free-Zone Treaty (Treaty of Rarotonga): 1985; 15 countries; prohibits testing, deployment, or acquisition of nuclear weapons in the South Pacific.

Intermediate Range Nuclear Forces (INF) treaty: 1987; United States, USSR; eliminated ground-launched ballistic and cruise missiles with a range between 500 and 5,500 kilometers. All of these missiles, their launchers, and associated support structures and support equipment were destroyed.

START I: 1994; United States, USSR; reduces arsenals by about 30 percent. The original signatory, the USSR, has since dissolved and the states of Russia, Belarus, Kazakhstan, and Ukraine have endorsed the treaty by signing the START I Protocol.

African Nuclear Weapons Free-Zone (Treaty of Pelindaba): 1996; 53 signatories, three ratifications; prohibits building, testing, burying, or stockpiling nuclear materials.

Comprehensive Test Ban Treaty (CTBT): 1996; 148 signatories, 7 ratifications (as of 1 October 1997): bans any nuclear weapon test explosion or any other nuclear explosion.

SELECTED REGIME PARTICIPANTS

	NSG	GP	BWC	CWC**	AG	MTCR	WA
Argentina	●	●	●	●	●	●	●
Australia	●	●	●	●	●	●	●
Austria	●	●	●	●	●	●	●
Belgium	●	●	●	●	●	●	●
Brazil	●	●	●	●		●	
Bulgaria	●	●	●	●			●
Canada	●	●	●	●	●	●	●
China*	N	●	●	●			
Czech Republic	●	●	●	●	●		●
Denmark	●	●	●	●	●	●	●
Egypt	N	●	S				
Finland	●	●	●	●	●	●	●
France	●	●	●	●	●	●	●
Germany	●	●	●	●	●	●	●
Greece	●	●	●	●	●	●	●
Hungary	●	●	●	●	●	●	●
Iceland	N	●	●	●	●	●	
India		●	●	●			
Iran	N	●	●	●			
Iraq	N	●	●				
Ireland	●	●	●	●	●	●	●
Israel*		●		S			
Italy	●	●	●	●	●	●	●

	NSG	GP	BWC	CWC**	AG	MTCR	WA
Japan	●	●	●	●	●	●	●
Korea, North	N	●	●				
Korea, South	●	●	●	●	●		●
Libya	N	●	●				
Luxembourg	●	●	●	●	●	●	●
Netherlands	●	●	●	●	●	●	●
New Zealand	●	●	●	●	●	●	●
Norway	●	●	●	●	●	●	●
Pakistan		●	●	●			
Poland	●	●	●	●	●		●
Portugal	●	●	●	●	●	●	●
Romania*	●	●	●	●	●		●
Russian Fed.	●	●	●	●		●	●
Slovak Republic	●	●	●	●	●		●
South Africa	●	●	●	●		●	
Spain	●	●	●	●	●	●	●
Sweden	●	●	●	●	●	●	●
Switzerland	●	●	●	●	●	●	●
Syria	N	●	S				
Turkey	N	●	●	●		●	●
Ukraine	●		●	S			●
United Kingdom	●	●	●	●	●	●	●
United States	●	●	●	●	●	●	●

Regime	Total number of participants (as of date)
Nuclear Suppliers Group (**NSG**)	34 (N = NPT: 185) (1/97)
Geneva Protocol (**GP**)	145 (7/96)
Biological Weapons Convention (**BWC**)	140 (S = signed: 158) (5/97)
Chemical Weapons Convention (**CWC**)**	106 (S = signed: 168) (11/97)
Australia Group (**AG**)	30 (10/96)
Missile Technology Control Regime (**MTCR**)	29 (11/97)
Wassenaar Arrangement (**WA**)	33 (12/96)

* China, Israel, and Romania have pledged to abide by the basic tenets of the Missile Technology Control Regime.

** For the latest list of CWC signatories/parties, see http://www.opcw.nl/